European Community Directive
on the Conservation of Natural Habitats
and of Wild Fauna and Flora
(92/43/EEC)

Fourth Report by the United Kingdom
under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Conservation status assessment for the habitat:

H8240 - Limestone pavements

UNITED KINGDOM

IMPORTANT NOTE - PLEASE READ

- The information in this document represents the UK Report on the conservation status of this habitat, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.

- It is based on supporting information provided by the geographically-relevant Statutory Nature Conservation Bodies, which is documented separately.

- The 2019 Article 17 UK Approach document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.

- The reporting fields and options used are aligned to those set out in the European Commission guidance.

- Maps showing the distribution and range of the habitat are included (where available).

- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the UK assessments. Further underpinning explanatory notes are available in the related country-level and/or UK offshore-level reports.

- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; and/or (ii) completion of the field was not obligatory.

- The UK-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

NATIONAL LEVEL	

1. General information

1.1 Member State	**UK**
1.2 Habitat code	**8240 - Limestone pavements**

2. Maps

2.1 Year or period	1976-2018
2.3 Distribution map	Yes
2.3 Distribution map Method used	Complete survey or a statistically robust estimate
2.4 Additional maps	No

BIOGEOGRAPHICAL LEVEL	

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	**Atlantic (ATL)**
3.2 Sources of information	England BACKSHALL, J., MANLEY, J., REBANE, M. 2001. Chapter 10: Crags, scree and limestone pavement. In: The Upland Management Handbook. English Nature, Peterborough.TURAL ENGLAND. 2008. Chapter 3.9 Inland Rock. In: State of the Natural Environment 2008. Natural England. ORANGE, A. 2008. Saxicolous lichen and bryophyte communities in Upland Britain. JNCC Report No: 404. WARD, S.D & EVANS, D.F. 1976. Conservation assessment of British limestone pavements based on floristic criteria. Biological Conservation, 9, 217-233. http://www.limestone-pavements.org.uk/ http://www.lakelandwildlife.co.uk/biodiversity/pdfs/Rock habitats 100121 finished.pdf Webb, S. 2013. Limestone Pavements, Chapter 5, pg 93-110 in Caves and Karst of the Yorkshire Dales, Eds: Waltham T and Lowe, D. British Cave Research Association. Scotland References within - http://jncc.defra.gov.uk/pdf/Article17Consult_20131010/H8240_SCOTLAND.pdf SNH SCM database, extract A2298772, 2017, processed and summarised in A2498678. Limestone pavement feature type (JNCC, (2009), Common Standards Monitoring Guidance for Upland Habitats, Version July 2009 and previous versions) http://jncc.defra.gov.uk/page-2237 Wales Blackstock T. H., Howe E. A., Stevens J. P., Burrows C. R. & Jones P. S. 2010. Habitats of Wales. A comprehensive field survey 1979-1997. University of Wales Press, Cardiff. BRIG. 2007. A preliminary Assessment of the implications of climate change for the implementation of UK BAP targets. Report to UK Biodiversity Partnership Standing Committee. (Draft). British Geological Survey. 2003. Digital geology data layer DiGMapGB250. BGS dataset. Conway J. & Onslow E. 1999. The impact of grazing management on limestone pavements in Wales. CCW Science report 346. Deacon J. 1997. Identification of Limestone pavements in Wales and their Flora.

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JNCC. 2007. Second Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2001 to December 2006 Conservation status assessment for: H8240: Limestone pavements. JNCC. http://jncc.defra.gov.uk/pdf/Article17/FCS2007-H8240-audit-Final.pdf

Jones P.J., Stevens D.P., Blackstock T.H., Burrows C.R. and Howe E.A. 2003 Priority Habitats of Wales: a technical guide. CCW.

NRW. 2012. Welsh supporting documentation for the Third Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2007 to December 2012. Conservation status assessment for: H8240: Limestone pavements.

Rodwell J.S. (ed.). 1991-2000. British Plant Communities (five volumes). Cambridge University Press, Cambridge.

Stevens D. P. Smith S. L. N. Blackstock T. H. Bosanquet S. D. S. & Stevens J. P. 2010. Grasslands of Wales. A survey of lowland species-rich grasslands, 1987-2004. University of Wales Press, Cardiff.

Stevens J. & Smith S. 2012. H8240 Limestone pavements: Wales GIS inventory. CCW HQ dataset.

N.Ireland

DEACON, J. 1997. Identification of limestone pavements in Wales and their flora. CCW Contract Science Report No. 159 CCW Bangor

FOGG, T and KELLY, J. 1995. The Karst Geomorphology of Northern Ireland. A report to Environment Service, Department of the Environment for Northern Ireland.

JACKSON, D.L. & MCLEOD, C.R. (eds.) 2002. Handbook on the UK status of EC Habitats Directive interest features: provisional data on the UK distribution and extent of Annex I habitats and the UK distribution and population size of Annex II species. JNCC Report No. 312. Version 2.

Limestone Pavement Action Group. 2000. Managing our fragile heritage: Limestone Pavement. Limestone Pavement Action Group. Cumbria.

Limestone Pavement Action Group. 2003. Our Fragile Heritage. Limestone Pavement Group. Cumbria

Murphy, S. & Fernandez, F. (2009) The development of methodologies to assess the conservation status of limestone pavement and associated habitats in Ireland. Irish Wildlife Manuals, No. 43. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

NIEA. Internal Condition Assessment Reports (various sites and years).

NIEA. Internal Survey Reports (various sites and years).

Pendry, S. and Allen, C. (Eds.) 1999. On stony ground: an investigation into trade in water-worn limestone between the United Kingdom and Republic of Ireland. Countryside Agengy, The Heritage Council and TRAFFIC International.

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WARD, S.D. & EVANS, D.F. 1976. Conservation assessment of British limestone pavements based on floristic criteria. Biological Conservation, 9, 217-233.

WEBB, S. 1995. Conservation of limestone pavement. Cave and Karst Science. 21: 97-100.

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WEBB, S. & GLADING, P. 1998. The ecology and conservation of limestone pavement in Britain British Wildlife. 103-113.

Webb, S and Ward, S. 1999. Limestone Pavement in the United Kingdom, Statistics prepared 1999 by Simon Webb and Stephen Ward for the biodiversity Action Plan Working Group

4. Range

4.1 Surface area (in km²)	14396.13	
4.2 Short-term trend Period	2007-2018	
4.3 Short-term trend Direction	Stable (0)	
4.4 Short-term trend Magnitude	a) Minimum	b) Maximum
4.5 Short-term trend Method used	Complete survey or a statistically robust estimate	
4.6 Long-term trend Period		
4.7 Long-term trend Direction		
4.8 Long-term trend Magnitude	a) Minimum	b) Maximum
4.9 Long-term trend Method used		
4.10 Favourable reference range	a) Area (km²)	14396.13
	b) Operator	
	c) Unknown	No
	d) Method	The FRR is approximately equal to the current range area. The FRR value has been updated to take account of improved information on the habitat range. The approach taken to set the FRR is explained in the 2007 and 2013 UK Article 17 habitat reports (see http://jncc.defra.gov.uk/page-4064 and http://jncc.defra.gov.uk/page-6563).
4.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data	
	The change is mainly due to:	Improved knowledge/more accurate data
4.12 Additional information		

5. Area covered by habitat

5.1 Year or period	1979-2018		
5.2 Surface area (in km²)	a) Minimum	b) Maximum	c) Best single value 25.7332
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Complete survey or a statistically robust estimate		
5.5 Short-term trend Period	2001-2018		
5.6 Short-term trend Direction	Stable (0)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Complete survey or a statistically robust estimate		
5.9 Long-term trend Period			
5.10 Long-term trend Direction			
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used			
5.13 Favourable reference area	a) Area (km²) 25.7332		

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b) Operator	
c) Unknown	No
d) Method	The FRA is approximately equal to the current area. The approach taken to set the FRA is explained in the 2007 and 2013 UK Article 17 habitat reports (see http://jncc.defra.gov.uk/page-4064 and http://jncc.defra.gov.uk/page-6563).
5.14 Change and reason for change in surface area of range	Improved knowledge/more accurate data The change is mainly due to: Improved knowledge/more accurate data
5.15 Additional information	

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 4.9	Maximum 4.9
	b) Area in not-good condition (km²)	Minimum 14.19	Maximum 14.19
	c) Area where condition is not known (km²)	Minimum 6.6432	Maximum 6.6432
6.2 Condition of habitat Method used	Complete survey or a statistically robust estimate		
6.3 Short-term trend of habitat area in good condition Period	2004-2018		
6.4 Short-term trend of habitat area in good condition Direction	Increasing (+)		
6.5 Short-term trend of habitat area in good condition Method used	Complete survey or a statistically robust estimate		
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period?		No
6.7 Typical species Method used			
6.8 Additional information			

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Intensive grazing or overgrazing by livestock (A09)	H
Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	M
Other invasive alien species (other then species of Union concern) (I02)	M
Problematic native species (I04)	H
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	M

Threat	Ranking
Intensive grazing or overgrazing by livestock (A09)	H

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Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (C01)	M
Other invasive alien species (other then species of Union concern) (I02)	M
Problematic native species (I04)	H
Mixed source air pollution, air-borne pollutants (J03)	M
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H

7.2 Sources of information

7.3 Additional information

8. Conservation measures

8.1 Status of measures	a) Are measures needed?	Yes
	b) Indicate the status of measures	Measures identified and taken
8.2 Main purpose of the measures taken	Restore the habitat of the species (related to 'Habitat for the species')	
8.3 Location of the measures taken	Both inside and outside Natura 2000	
8.4 Response to the measures	Medium-term results (within the next two reporting periods, 2019-2030)	
8.5 List of main conservation measures		

Adapt mowing, grazing and other equivalent agricultural activities (CA05)
Adapt/manage extraction of non-energy resources (CC01)
Management of problematic native species (CI05)
Reduce impact of mixed source pollution (CJ01)
Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)
Management, control or eradication of other invasive alien species (CI03)

8.6 Additional information

9. Future prospects

9.1 Future prospects of parameters	a) Range	Good
	b) Area	Good
	c) Structure and functions	Poor
9.2 Additional information	Future trend of Range is Overall stable; Future trend of Area is Overall stable; and Future trend of Structure and functions is Positive - slight/moderate improvement	

10. Conclusions

10.1. Range	Favourable (FV)
10.2. Area	Favourable (FV)
10.3. Specific structure and functions (incl. typical species)	Unfavourable - Bad (U2)

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10.4. Future prospects	Unfavourable - Inadequate (U1)
10.5 Overall assessment of Conservation Status	Unfavourable - Bad (U2)
10.6 Overall trend in Conservation Status	Improving (+)
10.7 Change and reasons for change in conservation status and conservation status trend	a) Overall assessment of conservation status No change The change is mainly due to: b) Overall trend in conservation status No change The change is mainly due to:
10.8 Additional information	Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; and (ii) the current Range surface area is approximately equal to the Favourable Reference Range. Conclusion on Area covered by habitat reached because: (i) the short-term trend direction in Area is stable; and (ii) the current Area is approximately equal to the Favourable Reference Area. Conclusion on Structure and functions reached because habitat condition data indicates that more than 25% of the habitat is in unfavourable (not good) condition. Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Area covered by habitat are good; and (iii) the Future prospects for Structure and functions are poor. Overall assessment of Conservation Status is Unfavourable-bad because one or more of the conclusions is Unfavourable-bad. Overall trend in Conservation Status is based on the combination of the short-term trends for Range - stable, Area covered by habitat - stable, and Structure and functions - increasing.

11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum b) Maximum c) Best single value 5.1013
11.2 Type of estimate	Best estimate
11.3 Surface area of the habitat type inside the network Method used	Based mainly on extrapolation from a limited amount of data
11.4 Short-term trend of habitat area in good condition within the network Direction	Increasing (+)
11.5 Short-term trend of habitat area in good condition within network Method used	Complete survey or a statistically robust estimate
11.6 Additional information	

12. Complementary information

12.1 Justification of % thresholds for trends	

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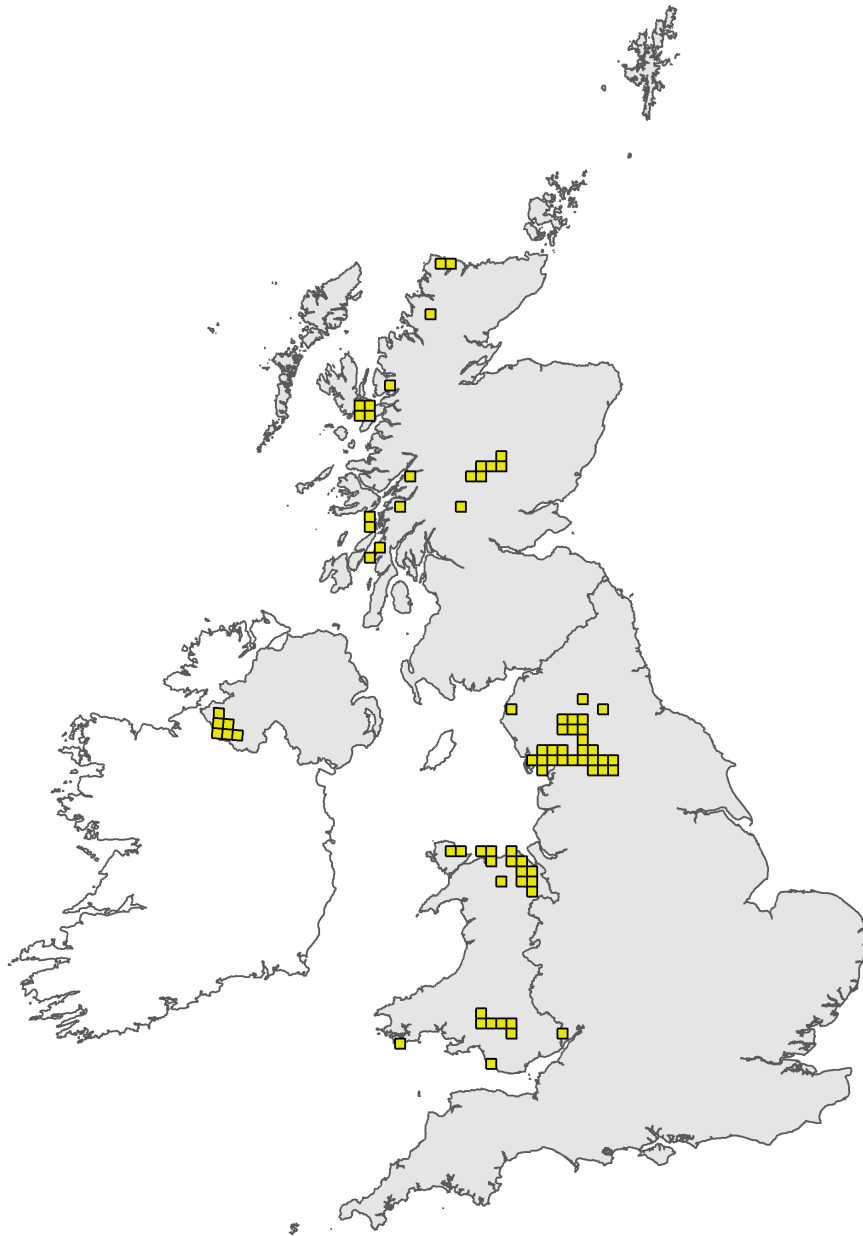
Distribution Map

Figure 1: UK distribution map for H8240 - Limestone pavements. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available habitat records which are considered to be representative of the distribution within the current reporting period. For further details see the 2019 Article17 UK Approach document.
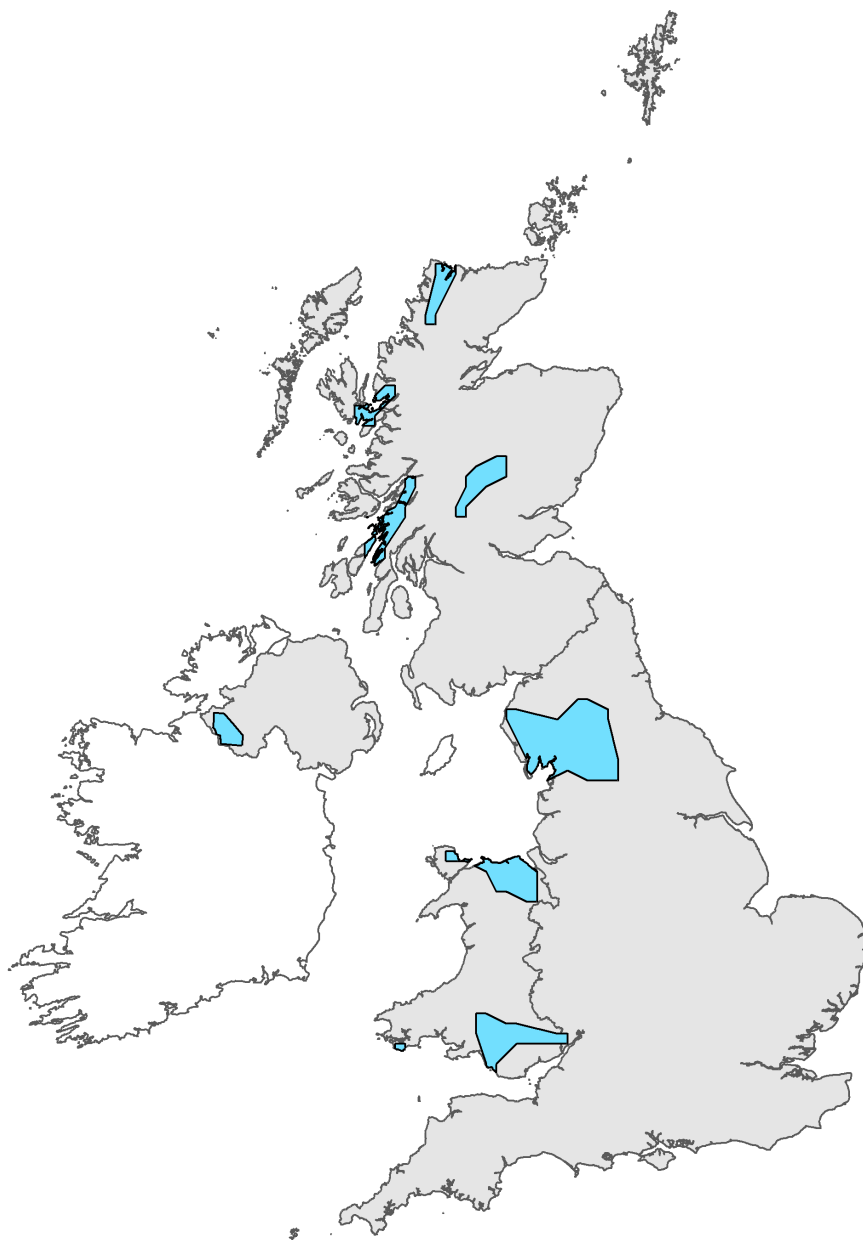
Range Map

Figure 2: UK range map for H8240 - Limestone pavements. Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this habitat was 25km. For further details see the 2019 Article 17 UK Approach document.